UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,315	09/12/2003	Xun Xu	80398P566	7841

8791 7590 01/08/2008	EXAMINER
BLAKELY SOKOLOFF TAYLOR & ZAFMAN	BAYAT, ALI
1279 OAKMEAD PARKWAY	
SUNNYVALE, CA 94085-4040	

ART UNIT	PAPER NUMBER
2624	

MAIL DATE	DELIVERY MODE
01/08/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/661,315	XU, XUN
	Examiner	Art Unit	
	Ali Bayat	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 September 2003*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date *See Continuation Sheet*.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :3/30/06;2/21/06;10/4/04;9/12/03.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

> Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

> When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and Warmerdam, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

> In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

Claims [11-20] are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim [11] defines [a machine-readable medium having instructions to cause a machine to perform a computerized method of video segmentation....] embodying functional descriptive material. However, the claim does not define a computer-readable medium or memory and is thus non-statutory for that reason (i.e., "When

functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" – Guidelines Annex IV). That is, the scope of the presently claimed [a machine-readable medium having instructions to cause a machine to perform a computerized method of video segmentation, the computerized method comprising:] can range from paper on which the program is written, to a program simply contemplated and memorized by a person. The examiner suggests amending the claim to embody the program on "computer-readable medium" or equivalent in order to make the claim statutory. Any amendment to the claim should be commensurate with its corresponding disclosure. Examiner suggests amending the preamble of claim 11 to "A computer-readable medium storing a computer program to cause a computer to perform a computerized method of video segmentation, the computerized method comprising:" further in claims 12-20, please change "The machine-readable medium" to "the computer-readable medium".

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign

country or in public use or on sale in this country, more than one year prior to the date of

application for patent in the United States.

Claims 1-40 are rejected under 35 U.S.C. 102(b) as being anticipated by

Sharma et al. (US 6,192,079).

In regard to claim 1, Sharma provides for generating a transitional

segmentation mask (Fig.2 see interpolated frame, col.4 lines 39-47) by

interpolating a first binary mask (Fig.2 see current frame col.4 lines 45-50) and a

second binary mask (Fig.2 see previous frame col.4 lines 45-50).

With regard to claims 2,12,22 and 32 Sharma provides for generating

motion field data based on the first binary mask and the second binary mask (

col.4 lines 45-50, see interpolator STMF captures small object motions in 3x3

regions).

As to claims 3,13,23 and 33 Sharma provides for warping the first binary

mask and the motion field data to generate a first warped frame; and warping the

second binary mask and the motion data to generate a second warped frame (

col.4 lines 45-50, see interpolator STMF captures small object motions in 3x3

regions, also see col.8 lines 39-41).

In regard to claims 4,14,24 and 34 Sharma provides for intersecting the first

warped frame and the second warped frame to generate a first intersecting frame

(Fig.2 see interpolated frame, corresponds to intersecting frame, col.4 lines 45-

50, note the 3x3 regions for current and previous frames with object motions).

With regard to claims 5,15,25 and 35 Sharma provides for differencing the first warped frame (Fig.7 element 200) and the first intersecting frame (Fig.7 element 202) to generate a first difference mask (Fig.7 element 204, see col.9 lines 1-13).

As to claims 6,16,26 and 36 Sharma provides for identifying a first pixel in the first warped frame not in the first intersecting mask (col.7 lines 40-50, note the pixel-wise difference between the current and previous frames).

In regard to claims 7,17,27 and 37 and Sharma provides for differencing the second warped frame (Fig.7 element 210) and the first intersecting frame(Fig.7 element 202) to generate a second difference mask ((Fig.7 element 212, see col.9 lines 1-13).

With regard to claims 8,18,28 and 38 Sharma provides for identifying a first pixel in the second warped frame not in the first intersecting mask (col.7 lines 40-50, note the pixel-wise difference between the current and previous frames).

As to claims 9,19,29 and 39 and Sharma provides for intersecting the first difference mask and the second difference mask to generate a second intersecting mask (Fig.7 element 208, col.9 lines 1-13).

In regard to claims 10,20,30 and 40 Sharma provides for combining the first intersecting mask (Fig.6 element 101) and the second intersecting mask (Fig.6 element 116)to generate the transitional mask (Fig.6 element 104, see col.8 lines 60-67).

With regard to claims 11, 21 and 31, see the rejection of claim 1. They recite similar limitations as claim 1. Hence they are similarly analyzed and rejected.

Contact Information

3.   Any inquiry concerning this communication or earlier communications

from the examiner should be directed to Ali Bayat whose telephone number is

571-272-7444. The examiner can normally be reached on M-F 9:00 AM-5:00

PM.

If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, Matthew Bella can be reached on 571-272-7778. The fax

phone number for the organization where this application or proceeding is

assigned is 571-273-8300.

Information regarding the status of an application may be obtained from

the Patent Application Information Retrieval (PAIR) system. Status information

for published applications may be obtained from either Private PAIR or Public

PAIR. Status information for unpublished applications is available through

Private PAIR only. For more information about the PAIR system, see http://pair-

direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-

free). If you would like assistance from a USPTO Customer Service

Representative or access to the automated information system, call 800-786-

9199 (IN USA OR CANADA) or 571-272-1000.

Ali Bayat
Patent Examiner
Division 2624
1/03/07

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600